

OPERATOR'S MANUAL

DieHard®

BATTERY CHARGER 60/20/2 Amp

275/125 AMP ENGINE STARTER With Battery Tester and GFCI Outlets

**Model No.
28.71234**



CAUTION:

**Read and follow all Safety
Rules and Operating Instructions
Before Every Use of this Product.**

SAVE THESE INSTRUCTIONS.

Sears, Roebuck and Co., Hoffman Estates, IL 60179 U.S.A.

00-99-000881/0808

TABLE OF CONTENTS

SECTION	PAGE
1. IMPORTANT SAFETY INSTRUCTIONS	X
2. PRODUCT FEATURES	X
3. BEFORE USING	X
4. CONNECTING CABLE ASSEMBLY	X
5. USING INVERTER	X
6. DISPLAYS	X
7. OPERATING TIPS	X
8. SPECIFICATIONS	X
9. REPLACEMENT PARTS	X
10. TROUBLESHOOTING	X

IMPORTANT: READ AND SAVE THIS SAFETY AND INSTRUCTION MANUAL.

1. IMPORTANT SAFETY INSTRUCTIONS

- 1.1** SAVE THESE INSTRUCTIONS – The DieHard model 71234 Manual Battery Charger, offers a wide range of features to accommodate the needs for home or light commercial use. This manual will show you how to use your charger safely and effectively. Please read and follow these instructions and precautions carefully as this manual contains important safety and operating instructions.
- 1.2** Do not expose charger to rain or snow.
- 1.3** Use of an attachment not recommended or sold by the battery charger manufacturer may result in a risk of fire, electric shock, or injury to persons.
- 1.4** To reduce risk of damage to electric plug and cord, pull by plug rather than cord when disconnecting charger.
- 1.5** An extension cord should not be used unless absolutely necessary. Use of improper extension cord could result in a risk of fire and electric shock. If an extension cord must be used, make sure:
 - That pins on plug of extension cord are the same number, size, and shape as those of plug on charger;
 - That extension cord is properly wired and in good electrical condition and;
 - That wire size is large enough for AC ampere rating of charger as specified in Table 8.3.
- 1.6** Do not operate charger with damaged cord or plug; take to a qualified service person. (Call customer service at: 800-SEARS-64.)
- 1.7** Do not operate charger if it has received a sharp blow, been dropped, or otherwise damaged in any way; take it to a qualified serviceman. (Call customer service at: 800-SEARS-64.)
- 1.8** Do not disassemble charger; take it to a qualified serviceman when service or repair is required. Incorrect reassembly may result in a risk of electric shock or fire. (Call customer service at: 800-SEARS-64.)
- 1.9** To reduce risk of electric shock, unplug charger from outlet before attempting any maintenance or cleaning. Turning off controls will not reduce this risk.

WARNING – RISK OF EXPLOSIVE GASES.

WORKING IN VICINITY OF A LEAD-ACID BATTERY IS DANGEROUS. BATTERIES GENERATE EXPLOSIVE GASES DURING NORMAL BATTERY OPERATION. FOR THIS REASON, IT IS OF UTMOST IMPORTANCE THAT YOU FOLLOW THE INSTRUCTIONS EACH TIME YOU USE THE CHARGER.

TO REDUCE RISK OF BATTERY EXPLOSION, FOLLOW THESE INSTRUCTIONS AND THOSE PUBLISHED BY BATTERY MANUFAC-

TURER AND MANUFACTURER OF ANY EQUIPMENT YOU INTEND TO USE IN VICINITY OF BATTERY. REVIEW CAUTIONARY MARKING ON THESE PRODUCTS AND ON ENGINE.

2. PERSONAL PRECAUTIONS

- 2.1** Consider having someone close enough by to come to your aid when you work near a lead-acid battery.
- 2.2** Have plenty of fresh water and soap nearby in case battery acid contacts skin, clothing, or eyes.
- 2.3** Wear complete eye protection and clothing protection. Avoid touching eyes while working near battery.
- 2.4** If battery acid contacts skin or clothing, wash immediately with soap and water. If acid enters eye, immediately flood eye with running cold water for at least 10 minutes and get medical attention immediately.
- 2.5** NEVER smoke or allow a spark or flame in vicinity of battery or engine.
- 2.6** Be extra cautious to reduce risk of dropping a metal tool onto battery. It might spark or short-circuit battery or other electrical part that may cause explosion.
- 2.7** Remove personal metal items such as rings, bracelets, necklaces, and watches when working with a lead-acid battery. A lead-acid battery can produce a short-circuit current high enough to weld a ring or the like to metal, causing a severe burn.
- 2.8** Use charger for charging a LEAD-ACID battery only. It is not intended to supply power to a low voltage electrical system other than in a starter-motor application. Do not use battery charger for charging dry-cell batteries that are commonly used with home appliances. These batteries may burst and cause injury to persons and damage to property.
- 2.9** NEVER charge a frozen battery.
- 2.10** **WARNING:** Pursuant to California Proposition 65, this product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

3. PREPARING TO CHARGE

- 3.1** If necessary to remove battery from vehicle to charge, always remove grounded terminal from battery first. Make sure all accessories in the vehicle are off, so as not to cause an arc.
- 3.2** Be sure area around battery is well ventilated while battery is being charged.
- 3.3** Clean battery terminals. Be careful to keep corrosion from coming in contact with eyes.
- 3.4** Add distilled water in each cell until battery acid reaches level specified by battery manufacturer. Do not overfill. For a battery without removable cell caps, such as valve regulated lead acid batteries, carefully follow manu-

facturer's recharging instructions.

- 3.5 Study all battery manufacturer's specific precautions while charging and recommended rates of charge.
- 3.6 Determine voltage of battery by referring to vehicle owner's manual and make sure that output voltage selector switch is set at correct voltage. If charger has adjustable charge rate, charge battery initially at lowest rate.

4. CHARGER LOCATION

- 4.1 Locate charger as far away from battery as DC cables permit.
- 4.2 Never place charger directly above battery being charged; gases from battery will corrode and damage charger.
- 4.3 Never allow battery acid to drip on charger when reading electrolyte specific gravity or filling battery.
- 4.4 Do not operate charger in a closed-in area or restrict ventilation in any way.
- 4.5 Do not set a battery on top of charger.

5. DC CONNECTION PRECAUTIONS

- 5.1 Connect and disconnect DC output clips only after setting any charger switches to "off" position and removing AC cord from electric outlet. Never allow clips to touch each other.
- 5.2 Attach clips to battery and chassis, as indicated in 6.5, 6.6, and 7.2 through 7.4.

6. FOLLOW THESE STEPS WHEN BATTERY IS INSTALLED IN VEHICLE

A SPARK NEAR BATTERY MAY CAUSE BATTERY EXPLOSION. TO REDUCE RISK OF A SPARK NEAR BATTERY:

- 6.1 Position AC and DC cords to reduce risk of damage by hood, door, or moving engine part.
- 6.2 Stay clear of fan blades, belts, pulleys, and other parts that can cause injury to persons.
- 6.3 Check polarity of battery posts. POSITIVE (POS, P, +) battery post usually has larger diameter than NEGATIVE (NEG, N, -) post.
- 6.4 Determine which post of battery is grounded (connected) to the chassis. If negative post is grounded to chassis (as in most vehicles), see (6.5). If positive post is grounded to the chassis, see (6.6).
- 6.5 For negative-grounded vehicle, connect POSITIVE (RED) clip from battery charger to POSITIVE (POS, P, +) ungrounded post of battery. Connect NEGATIVE (BLACK) clip to vehicle chassis or engine block away from battery. Do not connect clip to carburetor, fuel lines, or sheet-metal body parts. Connect to a heavy gauge metal part of the frame or engine block.

- 6.6 For positive-grounded vehicle, connect NEGATIVE (BLACK) clip from battery charger to NEGATIVE (NEG, N, -) ungrounded post of battery. Connect POSITIVE (RED) clip to vehicle chassis or engine block away from battery. Do not connect clip to carburetor, fuel lines, or sheet-metal body parts. Connect to a heavy gauge metal part of the frame or engine block.
- 6.7 When disconnecting charger, turn switches to off, disconnect AC cord, remove clip from vehicle chassis, and then remove clip from battery terminal.
- 6.8 See OPERATING INSTRUCTIONS for length of charge information.

7. FOLLOW THESE STEPS WHEN BATTERY IS OUTSIDE VEHICLE.

A SPARK NEAR THE BATTERY MAY CAUSE BATTERY EXPLOSION. TO REDUCE RISK OF A SPARK NEAR BATTERY:

- 7.1 Check polarity of battery posts. POSITIVE (POS, P, +) battery post usually has a larger diameter than NEGATIVE (NEG, N, -) post.
- 7.2 Attach at least a 24-inch-long 6-gauge (AWG) insulated battery cable to NEGATIVE (NEG, N, -) battery post.
- 7.3 Connect POSITIVE (RED) charger clip to POSITIVE (POS, P, +) post of battery.
- 7.4 Position yourself and free end of cable as far away from battery as possible – then connect NEGATIVE (BLACK) charger clip to free end of cable.
- 7.5 Do not face battery when making final connection.
- 7.6 When disconnecting charger, always do so in reverse sequence of connecting procedure and break first connection while as far away from battery as practical.
- 7.7 A marine (boat) battery must be removed and charged on shore. To charge it onboard requires equipment specially designed for marine use.

8. BATTERY CHARGING - AC CONNECTIONS

8.1 For all grounded cord-connected battery chargers:

- **GROUNDING AND AC POWER CORD CONNECTION**

INSTRUCTIONS – Charger should be grounded to reduce risk of electric shock. Charger is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an outlet that is properly installed and grounded in accordance with all local codes and ordinances.

DANGER – Never alter AC cord or plug provided – if it will not fit outlet, have proper outlet installed by a qualified electrician. Improper connection can result in a risk of an electric shock.

8.2 For grounded, cord-connected battery chargers with an input rating less than 15 amperes and intended for use on a nominal 120-volt circuit:

- This battery charger is for use on a nominal 120-volt circuit, and has a grounding plug that looks like the plug illustrated in sketch A in Figure 8.4. A temporary adapter, which looks like the adapter illustrated in sketches B and C, may be used to connect this plug to a two-pole receptacle as shown in sketch B if a properly grounded outlet is not available. The temporary adapter should be used only until a properly grounded outlet can be installed by a qualified electrician.

DANGER – Before using adapter as illustrated, be certain that center screw of outlet plate is grounded. The green-colored rigid ear or lug extending from adapter must be connected to a properly grounded outlet—make certain it is grounded. If necessary, replace original outlet cover plate screw with a longer screw that will secure adapter ear or lug to outlet cover plate and make ground connection to grounded outlet.

8.3 Recommended minimum AWG size for extension cords for battery chargers:

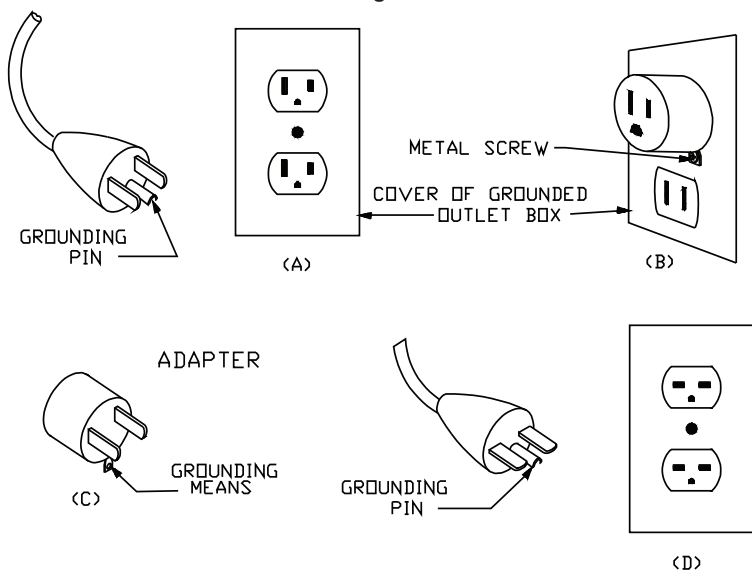
AC input rating, amperes ^a		AWG size of cord Length of cord, feet (m)			
At least	But less than	25 (7.6)	50 (15.2)	100 (30.5)	150 (45.6)
0	2	18	18	18	16
2	3	18	18	16	14
3	4	18	18	16	14
4	5	18	18	14	12
5	6	18	16	14	12
6	8	18	16	12	10
8	10	18	14	12	10
10	12	16	14	10	8
12	14	16	12	10	8
14	16	16	12	10	8
16	18	14	12	8	8
18	20	14	12	8	6

^aIf the input rating of a charger is given in watts rather than in amperes, the corresponding ampere rating is to be determined by dividing the wattage rating by the voltage rating – for example:

1250 watts/125 volts = 10 amperes

8.4

Grounding Methods



9. PARTS

The Sears service centers offer the following replacement parts for your battery charger. If you are having trouble with your battery charger, please contact a qualified service person to diagnose and/or repair your unit. It is not recommended that the consumer service the internal components of the battery charger, as improper handling or repair could lead to shock, electrocution, damage to the charger, or result in fire. As such, please contact 1-800-SEARS-64 for troubleshooting assistance and 1-800-366-PART for repair or replacement parts.

This section shows an illustration of your battery charger. Use it to become familiar with the location of all the parts, and what they look like.

Replacement Parts List DieHard 71240:

Item	Description	Part Number
1	Plastic Top	3799004100
2	Rocker Switch SPST	0499000050
3	Rocker Switch DPDT	0499000053
4	Control Board Assembly	2299001465
5	Handle	3599000262
6	Receptacle, GFCI, 15A	0099000587
7	Circuit Breaker	3999000108
8	Positive (RED) Cable w/clamps	3899001165
9	Negative (BLACK) Cable w/clamps	3899001164
10	Power Cord	90026177
11	Power Board/Heatsink Assembly	2299001467
12	Transformer	93026585
13	Fan Motor	0099000604
14	Hardware Kit	2299001078
15	Wheel	0099000120
16	Handle Grip	0399000018
17	Mounting Foot	1199005112
18	Axle	0099000066
19	Owner's Manual	0099000539

10. CHARGER FEATURES



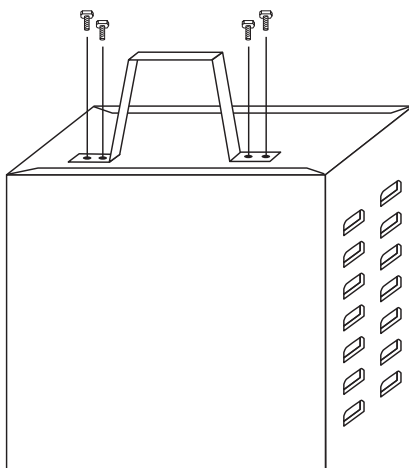
11. ASSEMBLY INSTRUCTIONS

It is important to fully assemble your charger before use. Follow these instructions for assembly:

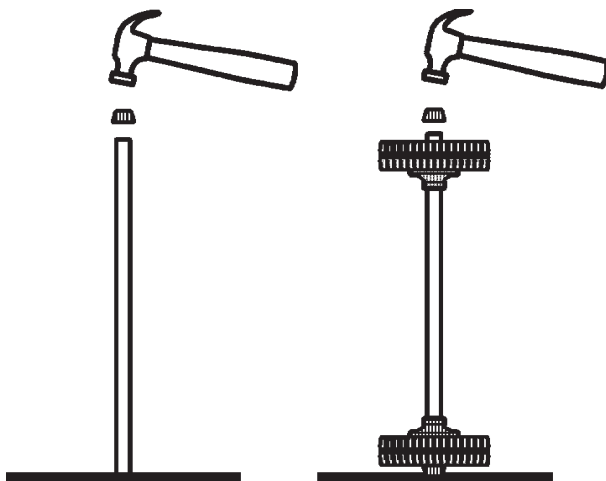
PARTS	TOOLS NEEDED
Two, 10-32, thread cutting screws Four, 1/4-20, thread cutting screws Two wheels One axle Two axle caps Two axle brackets One handle One handle grip One mounting foot	3/8" wrench (for mounting foot) 5/16" wrench (for wheels) Hammer Phillips screwdriver

TO ATTACH THE AXLE ASSEMBLY:

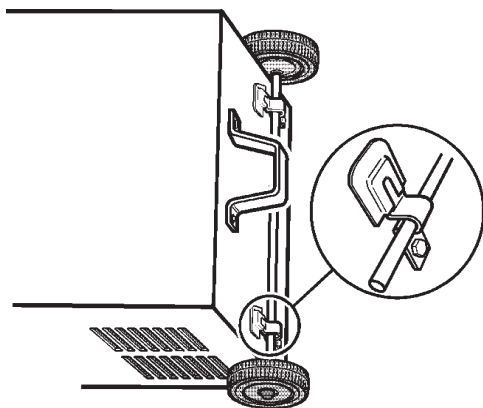
- 11.1** Remove charger from packing materials and place upside down on a flat surface. Attach mounting foot and secure with the four, 1/4-20 thread cutting screws.



- 11.2** Hold axle upright on floor or work surface. Then, using a hammer, tap one of the plastic axle caps onto the top end of the axle. Be sure to tap the axle cap on straight. Slide both wheels onto the axle with the axle caps facing each other.

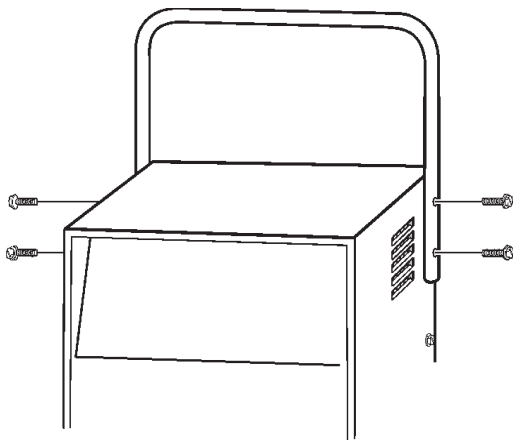


- 11.3** Place the charger on its side. Place one end of each bracket into slot, then place the axle assembly under each bracket. Fasten the other side of the brackets using the two, 10-32 screws provided.



11.4 To Attach Handle:

Turn the charger right side up onto its foot and wheels. Remove the two top screws from each side of the charger. Align the handle so the screw holes are aligned with the screw holes on each side of the wheel charger. Attach the handle using the same screws. \



12. USING THE GFCI OUTLET

This charger includes two – GFCI (Ground Fault Circuit Interrupter) outlets located on its back. The purpose of a GFCI outlet is to quickly stop the flow of electricity in the event a ground fault occurs on the device plugged into the battery charger's GFCI outlet. Ground fault circuit interrupters (GFCI) can help prevent electrical shock or electrocution.

The GFCI outlets provide auxiliary power to 120V devices that require less than 15 amps.

The GFCI must be tested before each use. To test:

- 12.1** Push the "Reset" button located on the GFCI receptacle, first to assure normal GFCI operation.
- 12.2** Plug a night light (with an "ON/OFF" switch) or other product (such as a lamp) into the GFCI receptacle and turn the product "ON."
- 12.3** Push the "Test" button located on the GFCI receptacle. The night light or other product should go "OFF."
- 12.4** Push the "Reset" button, again. The light or other product should go "ON" again.

NOTE: If the light or other product remains "ON" when the "Test" button is pushed, the GFCI is not working properly and should not be used. Call Customer Service at 1-800-SEARS-64 (1-800-732-7764).

- 12.5** The power cord must be plugged into a 3-prong grounded 120V AC wall outlet for the GFCI operation to function. Ground fault circuit interrupters (GFCI) can help prevent electrical shock or electrocution.
- 12.6** If you are charging a battery, the GFCI outlet should be limited to 3 amps of current draw until the charging functions are complete.
- 12.7** The GFCI outlet should not be used while the charger is in the ENGINE START mode.
- 12.8** If using both GFCI outlets at the same time, the amperage cannot exceed 15 amps of both devices combined.

13. OPERATING INSTRUCTIONS

SETTING THE CONTROLS

All controls for your charger are located on the front of the unit. Follow these instructions to obtain the accurate charge level for your battery.

13.1 POWER ON/OFF SWITCH

Make sure your charger is OFF when connecting or disconnecting your charger from the vehicle and power source. Turn your charger ON only when it is connected to the vehicle and plugged into a 3-prong grounded wall outlet.

13.2 BATTERY VOLTAGE SELECT

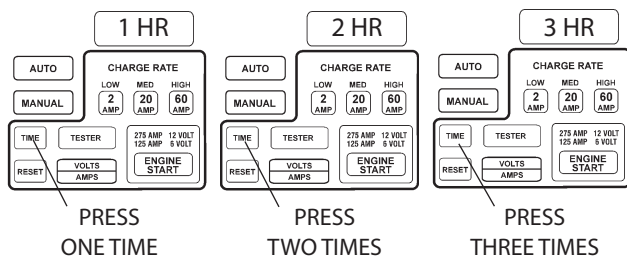
When charging, testing or starting 12 volt systems, select 12 VOLT. Select

6 VOLT when charging, testing or starting 6 volt systems.

13.3 TOUCH-PAD CONTROLS

With your charger connected to the vehicle and power source, the battery voltage (6 or 12 volt) selected, and the power turned ON, select either AUTOMATIC or MANUAL charge and the rate at which you want to charge your battery (2, 20, or 60 amp).

- **AUTO (Automatic):** When first turned ON, the charger will be in the Manual mode. Touch the AUTO pad and either the 2, 20, or 60 AMP Charge Rate Selector pad. Charging will start after a short delay. It will stop when the battery is fully charged. While charging, the METER will show battery voltage. Touch the VOLTS/AMPS pad to see the amount of amps being drawn by the battery.
- **MANUAL:** When first turned on, the charger will be in the Manual mode - there will be no need to select MANUAL. Select a charge rate and time. The charger will start charging after a short delay. **It will stop charging only when the selected time or maximum time is up.** For this reason, it is IMPORTANT to check the charger frequently to avoid overcharging the battery. While charging, the METER will show battery voltage. To see how much of the selected charge time is remaining, touch the TIME pad. The METER will show the time and, after a short delay, return to showing voltage. To see the amount of amps being drawn by the battery, touch the VOLTS/AMPS pad.
- **TIME:** To select a charging time, you must be in the MANUAL mode and have selected a charge rate. Touch the TIME pad until the desired time shows on the meter. The following chart shows the amount of time available for each charge rate and the amount of time, in hours, added for each touch of the TIME pad.

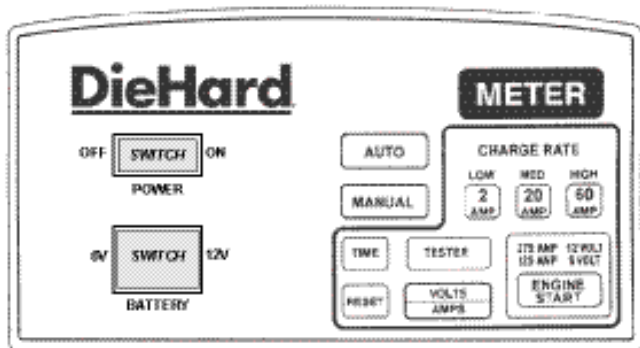


TOUCH "TIME" PAD TO ADD INCREMENTS

RATE	2 Amps	20 Amps	60 Amps
Maximum Time	18 Hours	10 Hours	5 Hours
Increment Settings	1 Hour	1 Hour	1/2 Hour

If you do not set a time, the charger will run for the maximum time. After selecting the charge rate and proper time, the charger will start charging after a short delay. To see how much time remains during the charging process, touch the TIME pad.

- **RESET:** To stop charging or to change settings once charging has begun, touch the RESET pad. Then proceed as if you've just turned on the charger.
- **VOLT/AMP:** When the charger is turned on the METER will display battery voltage. Touch the VOLTS/AMPS pad to display the charge rate in amps.
- **TESTER:** To check the battery's state-of-charge during charging, touch the RESET pad and then the TESTER pad. The METER will show the voltage of the battery. Wait about 5 minutes before taking a reading. To continue charging, proceed as if you've just turned the charger ON.
- **ENGINE START:** To use the starter feature to help crank the engine of your vehicle, touch RESET, MANUAL, and ENGINE START - in that order. Wait for the display to show RDY. The ENGINE START feature will deliver 275 amps to help crank a 12-volt system or 125 amps to help crank a 6-volt system. Crank the engine for **no more than 5 seconds**. If it does not start, **wait three minutes** before cranking again. During extremely cold weather, or if the battery is severely exhausted, charge the battery for about 5 minutes in the 60 AMP setting before cranking the engine.



CAUTION: DO NOT try to crank an engine without a battery installed. You may damage the vehicle's electrical system.

- **METER:** The meter displays the following information:

- A— Charge Rate in amps
- V— Voltage
- MAN Charger is in Manual mode
- AUTO Charger is in Automatic mode
- RDY Charger is ready for cranking

(Engine Start)

WAIT	Wait until the charger is ready before cranking again
FULL	Battery is charged (Automatic mode)
OFF	Time has expired (Manual or Timer mode)
HR	Hour(s)
CHK BATT	There is a problem with the battery or connections
OL	Too high a charging rate; lower rate to continue

14. CALCULATING CHARGE TIME

14.1 The Chart Method

Use the following table to more accurately determine the time it will take to bring a battery to full charge. First, identify where your battery fits into the chart.

- Small batteries — motorcycles, garden tractors, etc. — are usually rated in Ampere Hours (**AH**). For example: 6 to 12 AH, or 12 to 32 AH.
- Batteries in cars and smaller trucks are usually rated in Reserve Capacity (**RC**), Cold-Cranking Amps (**CCA**), or both.
- Marine or deep-cycle batteries are usually rated in Reserve Capacity (**RC**).
- **NR** means that the charger setting is **NOT RECOMMENDED**.

Find your battery's rating on the chart below and note the charge time given for each charger setting. The times given are for batteries with a **50-percent charge rate** prior to recharging. Add more time for severely discharged batteries.

BATTERY SIZE/RATING			CHARGE RATE/ CHARGING TIME - HOURS		
			2 AMP	20 AMP	60 AMP
SMALL BATTERIES	Motorcycle, garden, tractor, etc.	6 - 12 AH	2 - 4	NR	NR
		12 - 32 AH	4 - 10	NR	NR
CAR/TRUCKS	200 - 315 CCA	40 - 60 RC	11 - 14	60 - 90 min.	20 - 30 min.
	315 - 550 CCA	60 - 85 RC	14 - 18	90 - 120 min.	30 - 40 min.
	550 - 1000 CCA	85 - 190 RC	18 - 35	2 - 3.5 hrs.	45 - 60 min.
MARINE/DEEP CYCLE		80 RC	18	105 min.	NR
		140 RC	27	2 hrs., 45 min.	NR
		160 RC	30	3 hrs.	NR
		180 RC	33	3.5 hrs.	NR

14.2 The Hydrometer or Electronic Method

To find the time needed to fully charge your battery, determine the battery's charge level with a hydrometer or electronic Percent-of-Charge Tester. The following table will help you convert hydrometer readings to percent of charge values.

SPECIFIC GRAVITY	PERCENT OF CHARGE	PERCENT OF CHARGE NEEDED
1.265	100%	0%
1.225	75%	25%
1.155	25%	75%
1.120	0%	100%

When you know the percent of charge and the Amp Hour (AH) rating of your battery, you can calculate the approximate time needed to bring your battery to a full charge.

To **convert** Reserve Capacity to Amp Hours, divide Reserve Capacity by 2, and add 16:

$$\text{Amp Hours} = \frac{\text{Reserve Capacity}}{2} + 16$$

NOTE: The Reserve Capacity can be obtained from the battery specification sheet or the owner's manual.

To calculate time needed for a charge:

- Find the percent of **charge needed**. (A battery at 50 percent charge that

will be charged to 100 percent needs another 50 percent (.50)).

- Multiply the Amp Hour rating by the charge needed (.50) and divide by the charger setting (2 or 10 amps).
- Multiply the result by 1.25 and you'll have the approximate time needed, in hours, to bring the battery to full charge.
- Add one additional hour for a deep-cycle battery.

Example:

$$\frac{\text{Amp Hour Rating} \times \text{charge needed}}{\text{Charger Setting}} \times 1.25 = \text{hours of charge}$$

$$\frac{100 \text{ (AH Rating)} \times .50 \text{ (charge needed)}}{50 \text{ (Charger Setting)}} \times 1.25 = 6.25 \text{ hours}$$

$$\frac{100 \times .50}{50} = 1.25 \times 1.25 = 1.5625$$

You will need to charge your 100-Ampere Hour Battery for approximately 1 1/2 hours at the 50-Amp charge rate using the above example.

15. USING THE ENGINE START FEATURE

Your battery charger can be used to jump-start your car if the battery is low. Follow these instructions when using the ENGINE START feature.

- 15.1** Set the POWER switch to the OFF position. Then follow the instructions for connecting the charger to the battery and power source in the section "Charging a battery in the vehicle."
- 15.2** Set the BATTERY switch to 6V or 12V to match the battery's voltage.
- 15.3** Set the POWER switch to the ON position. The METER display will show MAN (manual mode).
- 15.4** Touch RESET, MANUAL and ENGINE START pads in that order. Wait for the display to show RDY. The charger is now ready to have the engine cranked.
- 15.5** Crank the engine for **no more than 5 seconds**. If it does not start, wait 3 minutes. (The display will show WAIT during this time and RDY when the time is up.)
- 15.6** During extremely cold weather, or if the battery is severely exhausted, charge the battery for about 5 minutes in 60 amp setting before cranking the engine.
- 15.7** If the engine still does not start, charge the battery for five more minutes before cranking it again for five seconds.
- 15.8** After the engine starts, unplug the charger power cord from the wall outlet. Then move the POWER switch to the OFF position before disconnecting from the battery.

Important:

Do not try to start the engine without a battery in it. You could cause damage to the electrical system.

If the engine does turn over, but never starts up, there is not a problem with the starting system, there is a problem somewhere else with the vehicle.

STOP cranking the engine until the other problem has been diagnosed and corrected.

NOTE: The GFCI outlet should not be used while the Charger is in the Engine Start Mode.

16. MAINTENANCE INSTRUCTIONS

- 16.1 Before performing maintenance, unplug and disconnect battery charger (see sections 6.7 or 7.6).
- 16.2 After use, use a dry cloth to wipe all battery corrosion and other dirt or oil from terminals, cords, and the charger case.
- 16.3 Through routine maintenance, ensure all user installed parts are secured.

17. STORAGE INSTRUCTIONS

- 17.1 Store charger unplugged, in an upright condition. Cord will still conduct electricity until it is unplugged from outlet.
- 17.2 Store inside, in a dry, cool place (unless you're using an on-board Marine Charger).
- 17.3 Do not store clips on handle, clipped together, on or around metal, or clipped to cables.

18. TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION/REASONS
No reading on the ammeter.	Clamps are not making a good connection. 2-amp charge rate is being used.	Check for poor connections to battery and frame. Make sure connecting points are clean. Ammeter may show no activity at the 2-amp charge rate.
Short start cycle when cranking engine.	Drawing more than 250 amps for a period of 3 seconds or less. Failure to wait for 4 minutes (240 seconds) between cranks.	Crank time varies with the amount of current drawn. If cranking draws more than 250 amps, crank time may be less than 3 seconds. Wait 4 minutes before next crank.
METER reading stays high.	Battery severely discharged. Wrong battery voltage.	Continue charging battery for two more hours. If problem continues, call Sears Service Center. Continue charging battery.
Ammeter reads less than selected charge rate when charging a discharged battery.	Extension cord too long or wire gauge too small. Weak cell or sulfated plate in battery. Battery is only partially discharged.	Use shorter or heavier gauge extension cord. Sulfated battery will eventually take a normal charge if left connected. If the battery will not take a charge, have it tested by a Sears technician. Continue charging battery.
Charger makes a loud buzz or hum.	Transformer laminations vibrate (buzz). Shorted diode (hum).	Continue charging. Buzz is not abnormal. Have charger tested by Sears technician.

**If the above solutions do not eliminate the problem
call toll-free from anywhere in the U.S.A.**

**1-800-SEARS-64
(1-800-732-7764)**

7 AM to 4:30 PM Central Time Monday through Friday

19. WARRANTY

THREE-YEAR FULL WARRANTY

If this Battery Charger fails due to a defect in material or workmanship within three years from the date of purchase, RETURN IT TO ANY SEARS STORE or OTHER DIEHARD OUTLET IN THE UNITED STATES FOR FREE REPLACEMENT.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Sears, Roebuck and Co.
Hoffman Estates, IL 60179

For information about troubleshooting, call toll-free from anywhere in the U.S.A. 7 am to 4:30 pm CT Monday through Friday.
1-800-SEARS-64 (1-800-732-7764).

For the repair or replacement parts you need, call 7 am to 7 pm, 7 days a week: 1-800-366-PART (7278)

